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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,142	01/26/2001	Jim Smith Hogan	1949-00400	7331

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EXAMINER
YILDIRIM, BEKIR L

ART UNIT	PAPER NUMBER
1764	

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Please find below and/or attached an Office communication concerning this application or proceeding.

AS-6

Office Action Summary	Application No. 09/770,142	Applicant(s) HOGAN, JIM SMITH	
	Examiner Bekir L. YILDIRIM	Art Unit 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 December 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-49* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

I. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

II. The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

III. Claims 1-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hogan (USP 4,872,954), Xing (USP 6,133,491) or Cha et al. (USP5,470,384) each in view of Nickens et al. (USP 6,139,806) .

Xing teaches a process for producing hydrocarbons from waste, which employs two pyrolysis zones corresponding to the two drums in the instant claims. The reference further teaches an pretreatment zone, which functions much like the two pyrolysis chambers, thus combination corresponds to the "three-drum" embodiment in the instant claims. Both pyrolysis sections have their own gas outlets and the flue gases may be

circulated to provide heat to the reaction zone. The temperature in the first thermal cracking zone is kept at 350 to 600 C and the second one at 600 to 1200 C. Both sections contain sealing means. (see Figure, col. 2, line 23 - col. 3, line 14, col. 6, lines 10-30).

Cha et al. teaches a process for producing hydrocarbons from tires, employing a horizontal screw reactor and a inclined screw reactor. The feed is provided to the first, inclined screw reactor by screw conveyor means. Both sections have sealing means as well as their own gas outlets. The temperatures employed are variable and generally 600 to 750 C in the first and 800 to 900 in the second reactor (see cols 7 and 8 supra).

Hogan teaches a process for the separation and extraction of gas liquid and solid components in waste material substantially same as the one claimed herein except for the employment of single retorting drum whereas two drums are employed in the claimed invention, and the lack of the scrubber in the instant claims, while reciting generally that a scrubber may be employed (see supra).

It would have been obvious however to one having ordinary skill in the art at the time the invention was made to modify the Hogan process by the employment of two pyrolysis zones instead of one, because both of the secondary references sharing the same technical endeavor with the instant application teach the advantages obtained by such as easing the reactor durability- temperature restrictions among others.

It is acknowledged that none of the references contain the "non-oxidative" limitation in the amended claims, *per se.*

However, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made, because the references by virtue of the the disclosure of reaction chambers sealed from the atmosphere, the

absence of any oxygen or air introduction means or the mere recitation of "pyrolysis" , "thermal" or "catalytic" cracking implicitly include those limitations within the conventional definition of the words, which does include non-oxidative environments. The references, need not provide the definition of words, to one with ordinary skill in the art. The processes clearly does not involve combustion, incineration oxidation or the like.

It is also acknowledged that none of the references teach the employment of the eductor scrubbers, mentioned in claims 4-7, 18-20, 32-38, 41-45 .

It would have been obvious to one having ordinary skill in the art to modify the process of Hogan by employing a venturi eductor scrubbing means substantially same as the one employed herein, because Hogan specifically suggests that the process and apparatus described therein can further be improved by inclusion of a scrubber. Given that there are a limited number of scrubbers having the utility in the claims it would be well within ordinary skill to judiciously select the proper one, in accordance with, the desired cleanliness of the products with the given feeds.

Response to Arguments

IV. Applicant's arguments filed on 12/27/2002 have been fully considered but they are not persuasive. The argument pertaining to the newly-introduced "non-oxidative" limitation has been addressed by the rejection above.

The argument that the eductor-scrubber have various advantages over other means of pyrolysis product gas treatment means and the fact that the references do not expressly mention them and that the field of the claimed invention is replete with art demonstrates the patentability of the instant use thereof is not found persuasive

because: The task at hand for one with ordinary skill is one of obtaining the gas product from pyrolysis zone in as pure a form as possible. The artisan would not limit himself, in searching for suitable means to achieve such function, to only the pyrolysis processes that are otherwise identical or even similar. For such artisan the venturi scrubber, such as that of Nickens et al. would be readily available as such means. It is noted that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Furthermore, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the artisan with the above-described technical endeavor of gas separation/purification would find it obvious to employ venturu scrubbers offered for such purpose. In response to applicant's argument that other advantages of the venturi scrubber, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Conclusion

V. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Knell et al. (USP 4,071,432) is pertinent for its disclosure of a pyrolysis process to recover hydrocarbon values from solid waste wherein "Condensible hydrocarbons can be separated and recovered by conventional means such as venturi scrubbers, indirect heat exchangers, wash towers, and the like".

Durai-Swamy (USP 4,324,644) is pertinent for its disclosure of the employment of Venturi scrubber in pyrolysis gases comprising solid fines.

Genssler et al. (USP 6,204,421) is pertinent for its disclosure of the use of venturi scrubber in pyrolysis product gas purification.

VI. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

VII. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bekir L. Yildirim whose telephone number is (703) 308-3586. The examiner can normally be reached on weekdays from 9 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marian Knode, can be reached on (703) 308-4311. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-6078.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0611.

Bekir L. Yildirim
Primary Examiner

B.L.Y.
January 15, 2003